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ABSTRACT THE DISCLOSURE

3 A capacitor fabrication method may include atomic layer depositing
4 a conductive barrier layer to oxygen diffusion over the first electrode.
5 A method may instead include chemisorbing a layer of a first precursor
6 at least one monolayer thick over the first electrode and chemisorbing
7 a layer of a second precursor at least one monolayer thick on the first
8 precursor layer, a chemisorption product of the first and second
9 precursor layers being comprised by a layer of a conductive barrier
10 material. The barrier layer may be sufficiently thick and dense to
11 reduce oxidation of the first electrode by oxygen diffusion from over the
12 barrier layer. An alternative method may include forming a first
13 capacitor electrode over a substrate, the first electrode having an inner
14 surface area per unit area and an outer surface area per unit area that
15 are both greater than an outer surface area per unit area of the
16 substrate. A capacitor dielectric layer and a second capacitor electrode
17 may be formed over the dielectric layer. The method may further
18 include forming rugged polysilicon over the substrate, the first electrode
19 being over the rugged polysilicon. Accordingly, the outer surface area
20 of the first electrode can be at least 30% greater than the outer surface
21 area of the substrate without the first electrode including polysilicon.
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